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Introduction

Tobacco use, particularly cigarette smoking, remains the leading cause of preventable illness and death in the United States (McGinnis and Foege 1993). A major challenge to our nation's public health leaders in the new millennium is to make this disturbing observation a thing of the past. Such a goal is no millennial dream. This Surgeon General's report provides evidence that tobacco use in this nation can be reduced through existing modalities of interventions.

The substantial body of literature reviewed in this report indicates that each of the modalities—educational, clinical, regulatory, economic, and social—provides evidence of effectiveness. The six major conclusions of this report provide the framework for the development of a coherent, long-term tobacco policy for this nation. Thus, although our knowledge about tobacco control remains imperfect, we know more than enough to act now. Widespread dissemination of the approaches and methods shown to be effective in each modality and especially in combination would substantially

- Reduce the number of young people who will become addicted to tobacco.
- Increase the success rate of young people and adults trying to quit using tobacco.
- Decrease the level of exposure of nonsmokers to environmental tobacco smoke (ETS).

- Reduce the disparities related to tobacco use and its health effects among different population groups.
- Decrease the future health burden of tobacco-related disease and death in this country.

These achievable improvements parallel the health objectives set forth in *Healthy People 2010*, the national action plan for improving the health of all people living in the United States for the first decade of the 21st century (U.S. Department of Health and Human Services [USDHHS] 2000). Twenty-one specific national health objectives related to tobacco use are listed in *Healthy People 2010*, including reducing the rates among young people and adults to less than half of the current rate of use. Attaining all of these tobacco-related objectives will almost certainly require significant national commitment to the various successful approaches described in this report.

The report's major conclusions are not formal policy recommendations. Rather, they offer a summary of the scientific literature about what works. In short, this report is intended to offer policymakers, public health professionals, professional and advocacy organizations, researchers, and, most important, the American people guidance on how to ensure that efforts to prevent and control tobacco use are commensurate with the harm it causes.

Continuing to Build the Scientific Base

Beginning with the 1964 Surgeon General's report, *Smoking and Health* (U.S. Department of Health, Education, and Welfare 1964), tobacco control policy in this nation has been built on a foundation of scientific knowledge. Each of the subsequent 24 reports of the Surgeon General on tobacco use has documented a vast and growing body of scientific literature. The substantial research reviewed in this report focuses on a key segment of the literature—what has been tried in the decades-old effort to reduce tobacco use. In turn, this focus clarifies which efforts work best. Certainly more research is needed so that these efforts can be

more efficient and effective; the key conclusion from this report, however, is that we know more than enough to take actions now to decrease the future health burden of tobacco-related disease and death in this country.

In the process of applying our current state of knowledge about preventing and controlling tobacco use, accountability and evaluation of the public health effort will be critical. However, because of the wide array of educational, clinical, regulatory, economic, and social influences that have been and will need to be brought to bear on the tobacco use problem, the direct

impact of a specific maneuver on a specific outcome becomes less meaningful as the combined effects become more substantial. Investigators tend to work on small, manageable aspects of the tobacco use problem, but the synergistic influence of multiple factors over time will likely extend far beyond the outcomes predicted from these smaller research undertakings. For example, as this report demonstrates, the most efficacious educational programs are those that take place in a larger community context, one that engenders and supports an environment of nonsmoking. Similarly, although clinical interventions to manage tobacco addiction clearly have some specific power to help smokers quit, primarily through pharmacological means, the social environment remains a major determinant of whether these new former smokers maintain their abstinence from nicotine addiction. Regulatory efforts, on the other hand, raise a host of social and economic issues and can produce broad societal changes—issues and changes, however, that are difficult to isolate, document, and evaluate. Economic strategies also have a great potential, but being fundamentally political in

nature, they require public consensus and changes in social norms before they can be attempted. Finally, the public health advocacy involved in social program modalities is virtually impossible to assess in a prospective or controlled research design.

The research and evaluation tools of public health must expand to meet these complex issues. Comprehensive, multifactorial approaches to tobacco control appear to offer the most promise. However, the penalty for comprehensive approaches is a loss of statistical power to attribute outcomes to specific activities. Within each of the modalities, appropriate evaluation methodologies are being used (see Table 1.1). However, many of these methodologies involve retrospective case study, time trend, econometric, and surveillance approaches to evaluate the “natural experiment” as it evolves in the changing social environment. Thus, the traditional biomedical and epidemiologic research methods that have worked so well in defining the health consequences of tobacco use are not well suited to evaluating the potentially most efficacious methods to reduce tobacco use.

The Changing Tobacco Industry

This report documents that this country's efforts to prevent the onset or continuance of tobacco use have faced the pervasive, countervailing influences of tobacco promotion by the tobacco industry. Despite the overwhelming and continually growing body of evidence of adverse health consequences of tobacco use, the norm of social acceptance of tobacco use in this nation has receded more slowly than might be expected, in part because of such continued promotion.

Litigation and legal settlements have produced notable changes in the tobacco industry's public positions on health risks, nicotine addiction, and advertising and promotion limits. Additionally, individual manufacturing companies have become more directly involved in efforts to limit the access of underage persons to tobacco products and to prevent young people from initiating tobacco use. In this rapidly changing social and legal environment, it is difficult to project the nature and scope of future changes by the industry or their impact on the national effort to reduce tobacco use. Nevertheless, any analysis of changes in patterns of

tobacco use must consider the influence of these industry changes.

One of the major arenas of potential change will be in the tobacco product itself. The manufactured cigarette that is widely marketed in the developed world was noted to be changing dramatically when this issue was first considered by the Surgeon General in 1981, in *The Changing Cigarette* (USDHHS 1981). Recent public statements by the tobacco industry suggest that the pace of changes in the manufactured cigarette could be accelerating in the future. The public health implications of changes in manufactured cigarettes and other tobacco-containing products will require careful and significant attention from both public health researchers and policymakers.

The litigation environment has demonstrated the importance of tobacco industry documents in analyzing the industry's influence. Legal and public health analyses are just beginning to sift through the millions of pages of documents made public as part of the various legal actions undertaken over the last

decade. As this process continues, public health researchers may develop better methods to define and evaluate the industry's past activities that may have

contributed to the character, pace, or direction of changes in tobacco use patterns in this country or around the world.

The Need for a Comprehensive Approach

The evidence of effectiveness summarized in this report emphasizes that public health success in reducing tobacco use requires activity using multiple modalities. A comprehensive approach—one that optimizes synergy from applying a mix of educational, clinical, regulatory, economic, and social strategies—has emerged as the guiding principle for future efforts to reduce tobacco use. The public health goals of such comprehensive programs are to reduce disease, disability, and death related to tobacco use through prevention and cessation, as well as through protection of the nonsmoker from ETS.

The emerging body of data on statewide tobacco control efforts is coming from programs broadly focused on prevention, cessation, and protection of the nonsmoker from ETS (Chapter 7). Preventing initiation among young people is a primary goal of any tobacco control effort. However, young people will perceive contradictory or inconsistent messages in our prevention efforts if programs do not also address the smoking behavior of millions of parents and other adult role models and the public health risks of ETS.

The Centers for Disease Control and Prevention (CDC) recently released *Best Practices for Comprehensive Tobacco Control Programs* (CDC 1999), which recommends that states establish tobacco control programs that are comprehensive, sustainable, and accountable. This document draws upon “best practices” determined by evidence-based conclusions from research and evaluation of such comprehensive programs at the state level. In the review of evidence from these states, it was evident that reducing the broad cultural acceptability of tobacco use necessitates changing many facets of the social environment. Nine

specific elements of a comprehensive program are defined in the guidance document. Although the importance of each of the elements is highlighted, the document stresses that these individual components must work together to produce the synergistic effects of a comprehensive program.

A medical analogy might be helpful to understand the practical implications of the current state of knowledge about these best practices of tobacco control. If we found a combination of nine therapy elements that effectively treated an almost incurable disease (e.g., advanced lung cancer), we would study the combined therapy in many ways to learn more about how it worked and which aspects of this combination therapy were most effective. However, while we were doing this research, we would give every patient with the disease the full combination of the nine therapy elements.

In the same way, with the nine components of *Best Practices*, we need to continue evaluating ongoing comprehensive programs to gain more knowledge about how the components work individually and in combination. But while this research continues, states should be applying all nine components.

Best Practices thus provides effective guidance for state-level efforts; a comprehensive national tobacco control effort, however, requires strategies that go beyond this guidance to states. As documented in earlier chapters of this report, a comprehensive national effort should involve the application of a mix of educational, clinical, regulatory, economic, and social strategies. In each of these modalities, some of the program and policy changes that are needed can be addressed most effectively at the national level.

Identifying and Eliminating Disparities

The elimination of health disparities related to tobacco use poses a great national challenge. Although this issue was not a main aspect of the current report, two other recent USDHHS publications have taken this focus. The 1998 Surgeon General's report *Tobacco Use Among U.S. Racial/Ethnic Minority Groups* was the first to address the diverse tobacco control needs of the four major U.S. racial/ethnic minority groups—African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics (USDHHS 1998). Similarly, *Healthy People 2010*, released in January 2000, has two overarching goals: increase quality and years of healthy life and eliminate health disparities among different segments of the U.S. population (USDHHS 2000). Both publications not only highlight the significant disparities in health that exist in the United States but also stress the critical need for a greater focus on this issue, both in research and in public health action.

Cultural, ethnic, religious, and social differences are clearly important in understanding patterns of tobacco use, but little research has been completed on the relative effectiveness of interventions for prevention and treatment in some of the population groups or communities. Reaching the national goal of eliminating health disparities related to tobacco use will necessitate improved collection and use of standardized data to correctly identify disparities in both health outcomes and efficacy of prevention programs among various population groups. Broader historical, societal, and community characteristics can have a significant influence on the manner in which prevention and control strategies that work overall for the population as a whole may impact diverse groups. Many of these broader variables do not lend themselves to traditional measurement methods, nor are they easily assessed at the individual level through the use of traditional epidemiologic methods.

Improving the Dissemination of State-of-the-Art Interventions

One of the greatest challenges in tobacco control and public health in general continues to be overcoming the difficulty in getting advances in prevention and treatment strategies effectively disseminated, adopted, and implemented in their appropriate delivery systems. Simply stated, our recent lack of progress in tobacco control is attributable more to the failure to implement proven strategies than it is to a lack of knowledge about what to do. The result is that each year in this nation, more than 1 million young people continue to smoke, and more than 400,000 adults continue to die prematurely from tobacco-related diseases.

Within each of the modalities reviewed in this report, some specific research advances in tobacco prevention and control strategies have not been fully implemented. Studies are urgently needed to identify the social, institutional, and political barriers to the more rapid dissemination of these research advances. Understanding these barriers and determining how they could be overcome would benefit not only tobacco control but also public health efforts more broadly.

Tobacco Use in Developing Nations

Analyses by the World Health Organization (WHO) have concluded that by 2030, current smoking patterns will produce about 500 million premature deaths from tobacco-related disease among people alive today (World Health Organization 1999). WHO further estimates that by 2030, tobacco is expected to be the single greatest cause of death worldwide, accounting for an estimated 10 million deaths per year. Although the impact of tobacco-related disease and death has been until recently a problem primarily for the developed countries of this world, WHO now estimates that by 2020, 7 of every 10 tobacco-related deaths will be in the developing world.

This report addresses research on strategies to reduce tobacco use within our nation's social, legal, and cultural environment. Nevertheless, findings from this report may have broad utility in the planning of tobacco control efforts around the world. As Chapter 2 documents, the public health response in this country to the scientific findings about the health consequences of tobacco products has taken more than four decades to emerge. In many parts of the developing world, the problems of tobacco use are similar to those in this country in the 1950s and 1960s. Hence, a key public health question for this millennium may be the following: can the time interval be significantly shortened between when the health risks of tobacco for a developing country are recognized and when a comprehensive national response is begun?

WHO, the World Bank, and the United Nations Foundation, with technical assistance from the CDC, have undertaken major new initiatives to address this problem. The WHO Tobacco Free Initiative is developing an international tobacco control infrastructure, which includes a global tobacco surveillance system, intervention tool kits, and regional technical assistance workshops. The World Bank has published *Curbing the Epidemic: Governments and the Economics of Tobacco Control* (Jha and Chaloupka 1999). This document provides an economic analysis that supports a multipronged approach to tobacco control, involving raising excise taxes, promoting policy changes related to the sales and promotion of tobacco products as well as to restrictions on smoking in public places, and widening access to smoking cessation therapies. The scientific findings in this report are consistent with the programmatic recommendations of both the WHO Tobacco Free Initiative and the World Bank document.

A momentous undertaking of WHO and member states, including the United States, is the development and negotiation of the Framework Convention on Tobacco Control. If brought to its intended ratification in the next few years, this agreement would provide a framework within which countries could develop more specific bilateral and multilateral protocols for cooperation on containing the spread of the tobacco epidemic. The framework would enable countries to start from a common understanding of the issues, priorities, and strategies necessary to harmonize tobacco control efforts between themselves so that some countries do not benefit at the expense of others. This is the spirit of the other activities of U.S. governmental and nongovernmental agencies in their effort to collaborate with WHO and with other countries in their development of surveillance, cessation, prevention, mass media, regulatory, economic, and social approaches to global tobacco control.

In the near future, emphasis must be placed on the development of surveillance systems so that countries can know the extent, distribution, and trends of the tobacco consumption problems in their populations. These systems will also track—for international comparison and monitoring of progress—the emergence of new forms of tobacco promotion, as well as new legislation, regulations, and programs for countering tobacco use. In the longer term, the gaps must be filled in each country's defenses against the incursions of tobacco use on their young people and other vulnerable populations. In particular, there will be a continuing need to ensure that the rapidly expanding knowledge about the efficacy of various tobacco control modalities be made available to the developing world.

The challenge to the world is to prevent tobacco use, particularly smoking, from ever becoming the leading cause of preventable illness and death in the world. Dr. Gro Harlem Brundtland, the current director-general of WHO, clearly defined this challenge when she stated, "If we do not act decisively, a hundred years from now our grandchildren and their children will look back and seriously question how people claiming to be committed to public health and social justice allowed the tobacco epidemic to unfold unchecked" (Asma et al., in press).

Tobacco Control in the New Millennium

Tobacco use will remain the leading cause of preventable illness and death in this nation and a growing number of other countries until tobacco prevention and control efforts are commensurate with the harm caused by tobacco use. This report provides the composite review of the major methods—educational,

clinical, regulatory, economic, and social—that can guide the development of this expanded national effort. This report is, therefore, a prologue to the development of a coherent, long-term tobacco policy for this nation.

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Abbreviations

ABC	American Broadcasting Company	GASP	Group Against Smokers' Pollution, Inc., Group Against Smoking Pollution, Group to Alleviate Smoking in Public Places, Georgians Against Smokers' Pollution
ACIR	Advisory Commission on Intergovernmental Relations	GATT	General Agreement on Tariffs and Trade
ACS	American Cancer Society	GCP	German Cardiovascular Prevention Study
ADA	Americans with Disabilities Act	ICC	Interstate Commerce Commission
ADAMHA	Alcohol, Drug Abuse, and Mental Health Administration	IMPACT	Initiatives to Mobilize for the Prevention and Control of Tobacco Use
AEG	American Economic Group, Inc.	INWAT	International Network of Women Against Tobacco
AHA	American Heart Association	IOM	Institute of Medicine
AHRQ	Agency for Healthcare Research and Quality	IRS	Internal Revenue Service
AIDS	acquired immunodeficiency syndrome	KYB	Know Your Body
ALA	American Lung Association	LST	Life Skills Training
ALERT	Adolescent Learning Experiences in Resistance Training	MFN	most favored nation
AMA	American Medical Association	MHHP	Minnesota Heart Health Program
ANR	Americans for Nonsmokers' Rights	MPP	Midwestern Prevention Project
ASSIST	American Stop Smoking Intervention Study	NAAAPI	National Association of African Americans for Positive Imagery
AzTEPP	Arizona Tobacco Education and Prevention Program	NAFTA	North American Free Trade Agreement
BRFSS	Behavioral Risk Factor Surveillance System	NCI	National Cancer Institute
BUGA-UP	Billboard Utilising Graffitists Against Unhealthy Promotions	NELS	National Education Longitudinal Study
CAUC	Coalition Against Uptozwn Cigarettes	NHLBI	National Heart, Lung, and Blood Institute
CBO	Congressional Budget Office	NSA	National Smokers Alliance
CDC	Centers for Disease Control and Prevention	NSTEP	National Spit Tobacco Education Program
CHAD	Community Syndrome of Hypertension, Atherosclerosis and Diabetes	NTCP	National Tobacco Control Program
COMMIT	Community Intervention Trial for Smoking Cessation	OIG	Office of Inspector General
CRS	Congressional Research Service	OR	odds ratio
CSAP	Center for Substance Abuse and Prevention	PSA	public service announcement
CSH	Coalition on Smoking OR Health	RICO	Racketeer Influenced and Corrupt Organizations Act
D.A.R.E.	Drug Abuse Resistance Education	SAMHSA	Substance Abuse and Mental Health Services Administration
DOC	Doctors Ought to Care	SCARC	Smoking Control Advocacy Resource Center
EPA	Environmental Protection Agency	SHOUT	Students Helping Others Understand Tobacco
ETS	environmental tobacco smoke	SHPPS	School Health Policies and Programs Study
FCC	Federal Communications Commission	STAT	Stop Teenage Addiction to Tobacco
FDA	Food and Drug Administration	TNT	Towards No Tobacco Use
FDCA	Food, Drug, and Cosmetic Act	TPLR	<i>Tobacco Products Litigation Reporter</i>
FTC	Federal Trade Commission		
GAO	General Accounting Office		

TVSFP	Television, School, and Family Smoking Prevention and Cessation Project	VSMM	University of Vermont School and Mass Media Project
U.S.C.	United States Code	WCTU	National Woman's Christian Temperance Union
USDA	U.S. Department of Agriculture	WHO	World Health Organization
USDHEW	U.S. Department of Health, Education, and Welfare	WSP	Waterloo Smoking Projects
USDHHS	U.S. Department of Health and Human Services	YRBS	Youth Risk Behavior Survey

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A Vision for the Future—Reducing Tobacco Use in the New Millennium

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